

**CLAIMS**

1. A system for sensing motion of a surface comprising:
  - a seismic sensor coupled to the surface; and
  - a shield configured to enclose the seismic sensor, wherein the shield is configured to provide an acoustic transmission loss, a wind noise loss, or both.
2. The system of claim 1, wherein the shield comprises:
  - a substantially rigid shell.
3. The system of claim 2, wherein the shell weighs at least about 1 pound per square foot.
4. The system of claim 2, wherein the shell weighs about 2 pounds per square foot.
5. The system of claim 2, wherein the shell comprises metal.
6. The system of claim 2, wherein the shell comprises fiberglass.
7. The system of claim 2, wherein the shell comprises a lead vinyl layer.
8. The system of claim 2, wherein a cross section of the shell is substantially circular in shape.
9. The system of claim 2, wherein the shell is about 2 feet in diameter.
10. The system of claim 2, wherein the shield further comprises a mass layer coupled to the shell.
11. The system of claim 10, wherein the mass layer weighs at least about 1 pound per square foot.

12. The system of claim 10, wherein the mass layer weighs about 2 pounds per square foot.
13. The system of claim 10, wherein the mass layer comprises a lead vinyl layer.
14. The system of claim 2, wherein the shield further comprises:
  - a structural damping material layer coupled to the shell.
15. The system of claim 14, wherein the structural damping material layer comprises an elastomeric material.
16. The system of claim 14, wherein the structural damping material layer comprises a rubber material.
17. The system of claim 14, wherein the structural damping material layer comprises a plastic material.
18. The system of claim 14, wherein the shield further comprises:
  - an acoustically absorptive material layer coupled to the structural damping material layer.
19. The system of claim 18, wherein the acoustically absorptive material layer comprises an open cell foam.
20. The system of claim 18, wherein the acoustically absorptive material layer comprises a fiberglass.
21. The system of claim 1, wherein the shield further comprises:
  - a compliant seal, wherein the compliant seal couples the shield to the surface.
22. The system of claim 21, wherein the compliant seal comprises an air filled rubber tube.

23. The system of claim 21, wherein the compliant seal comprises a sand filled rubber tube.
24. A shield for use with a seismic sensor coupled to a surface comprising:
  - a substantially rigid shell; and
  - a structural damping material layer coupled to the shell.
25. The shield of claim 24, further comprising a mass layer coupled to the shell.
26. The shield of claim 25, wherein the mass layer weighs at least about 1 pound per square foot.
27. The shield of claim 25, wherein the mass layer weighs about 2 pounds per square foot.
28. The shield of claim 24, wherein the shell weighs at least about 1 pound per square foot.
29. The shield of claim 24, wherein the shell weighs about 2 pounds per square foot.
30. The shield of claim 24, wherein the shell comprises metal.
31. The shield of claim 24, wherein the shell comprises fiberglass.
32. The shield of claim 24, wherein the shell comprises a lead vinyllayer.
33. The shield of claim 24, wherein a cross section of the shell is substantially circular in shape.
34. The shield of claim 24, wherein the shell is about 2 feet in diameter.
35. The shield of claim 24, wherein the structural damping material layer comprises an elastomeric material.

36. The shield of claim 24, wherein the structural damping material layer comprises a rubber material.

37. The shield of claim 24, wherein the structural damping material layer comprises a plastic material.

38. The shield of claim 24, further comprising:  
an acoustically absorptive material layer coupled to the structural damping material layer.

39. The shield of claim 38, wherein the acoustically absorptive material layer comprises an open cell foam.

40. The shield of claim 38, wherein the acoustically absorptive material layer comprises a fiberglass.

41. The shield of claim 24, further comprising:  
a compliant seal, wherein the compliant seal couples the shell to the surface,  
wherein the shield encloses the seismic sensor in a space.

42. The shield of claim 41, wherein the compliant seal comprises an air filled rubber tube.

43. The shield of claim 41, wherein the compliant seal comprises a sand filled rubber tube.

44. A system for sensing motion of a reference surface comprising:  
a seismic sensor, a shield, and a suspension;  
wherein the shield is coupled to the seismic sensor using the suspension, the seismic sensor is coupled to the surface, and the shield is configured to enclose the seismic sensor and to provide an acoustic transmission loss, a wind noise loss, or both.

45. The system of claim 44, wherein the shield comprises:
  - a substantially rigid shell.
46. The system of claim 45, wherein the shield further comprises:
  - a structural damping material layer coupled to the shell;
  - an acoustically absorptive material layer coupled to the structural damping material layer; and
  - a compliant seal, wherein the compliant seal couples the shell to the surface.
47. The system of claim 44, wherein the suspension is configured such that the shield provides a bias mass to the seismic sensor.
48. A method for sensing motion of a surface comprising:
  - coupling a seismic sensor to the surface; and
  - enclosing the seismic sensor with a shield, wherein the shield is configured to provide an acoustic transmission loss, a wind noise loss, or both.
49. The method of claim 48, wherein the shield comprises:
  - a substantially rigid shell.
50. The method of claim 49, wherein the shield further comprises:
  - a structural damping material layer coupled to the shell.
51. The method of claim 50, wherein the shield further comprises:
  - an acoustically absorptive material layer coupled to the structural damping material layer.
52. The method of claim 48, wherein the shield further comprises:

a compliant seal, wherein the compliant seal couples the shield to the surface.